

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 6, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** B. Caleca, P. Fox, and P. Meyer, Hanford Resident Inspectors  
**SUBJECT:** Hanford Activity Report for the Week Ending August 6, 2021

**Tank Farms:** The Tank Farms Operating Contractor (TOC) management notified DOE that they are ready to start the retrieval of waste from single shell tank AX-103. This will be the third of four AX farm tanks to be retrieved. The tank contains approximately 100,000 gallons of radioactive saltcake and sludge. TOC personnel will use robotic sluicing equipment to direct a pressurized water spray to mobilize the waste. They will then use a pump and the sluicing equipment to recirculate the waste mixture to dissolve the saltcake and entrain the sludge before the mixture is pumped to tank AZ-102 for storage; the waste will be held there until it can be sent to the Waste Treatment Plant for vitrification. Retrieval activities started following the declaration of readiness, and is expected to take approximately nine months to complete.

**Liquid Effluent Retention Facility (LERF):** Work to remove the damaged cover for LERF basin 44 is approximately 90% complete. Up to this point, while cutting away the damaged cover, workers have been using hose spray to decontaminate the surface of the basin's liner and push the existing sludge beneath the remaining cover toward the basin sump. This method has prevented contamination spreads by isolating the contaminated sludge from the environment and reduced worker exposure. However, with relatively little cover area remaining, the workers must now collect and remove the highly contaminated sludge. They are performing this work with hand shovels to prevent damage to the basin liner. This week, during the basin work, two personnel contamination events occurred, prompting TOC management to hold an ALARA review of the work activity. In the first event, contamination was found on the skin of a worker's finger. The individual was wearing a large ring underneath three layers of nitrile gloves; during physical labor, the ring tore through his gloves leading to the skin contamination. The individual was successfully decontaminated. The second event occurred when a worker who was assigned to one task which allowed the use of relatively permeable anti-c coveralls as the first protective layer with an impermeable rain bib as an outer layer, was reassigned to a basin work task which requires the use of less permeable anti-c coveralls as a first protective layer with an impermeable rain bib as an outer layer. Instead of exiting and donning the correct type of less permeable coveralls for their first layer, the individual remained in the relatively permeable coveralls and impermeable rain bibs they were already wearing. When the individual exited the basin, contamination was found on their modesty clothing. Because of the location of the contamination, TOC personnel believe that the contamination wicked through the permeable coverall which, similar to a previous event (see 6/25/21 report), was wet from sweat. Based on the results of the ALARA review, TOC management reemphasized the trained radiological worker practice of not wearing jewelry that might compromise personal protective equipment (PPE). They have also directed the use of fully impermeable rain gear for all basin work until cover and sludge removal is complete.

**105-KW Basin:** A worker collected a water sample in an area of the basin that had been posted as a high radiation area to support garnet filter media retrieval. Although the boundary was dropped to allow the work, the field work supervisor and supporting radiological control technician (RCT) realized after the work was complete that RCTs had not performed the required down post surveys prior to removal of the barrier. The event appears to have resulted from miscommunication and an informal assignment of work. The error did not result in any abnormally high radiation exposure.